

N09/4/ECOSO/SP2/ENG/TZ0/XX/T



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**ECOSYSTEMS AND SOCIETIES
STANDARD LEVEL
PAPER 2**

Wednesday 11 November 2009 (morning)

2 hours

RESOURCE BOOKLET

INSTRUCTIONS TO CANDIDATES

- Do not open this booklet until instructed to do so.
- This booklet contains **all** of the resources required to answer question 1.

Figure 1 World map showing the location of North York Moors, United Kingdom



[Source: Based on a UN map of the world (<http://www.un.org/Depts/Cartographic/map/profile/world.pdf>).
By permission of the UN Cartographic Section.]

Figure 2 Map and fact file on North York Moors National Park (NYMNP)

Protected moorland ecosystems:

- are found mainly on the higher land.
- have soils which are usually acidic and often waterlogged.
- support low-growing plants e.g. heather.



Coastline of the park is:

- 85 km long.
- rich in fossils, including those of dinosaurs.



Moorland is split up by river valleys that:

- are more fertile.
- are used for sheep farming.



NYMNP became a national park in 1952 because it contained:

- important wildlife habitats.
- areas of natural beauty.
- archaeological sites from Neolithic times.
- industrial heritage sites from the historic mining of iron ore, limestone and jet.



Conifer
(e.g. *Pinus sp.*)



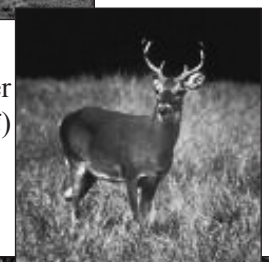
NYMNP:

- has an area of about 144 000 hectares.
- attracts many visitors because it is close to densely populated areas and easily accessible by road.



Bracken
(*Pteridium sp.*)

Deer
(*Muntiacus reevesi*)



Plants and animals of NYMNP:

- conifer forests
- bracken
- merlin (bird of prey)
- deer
- red grouse
- sheep
- badger.



Red grouse
(*Lagopus lagopus*)

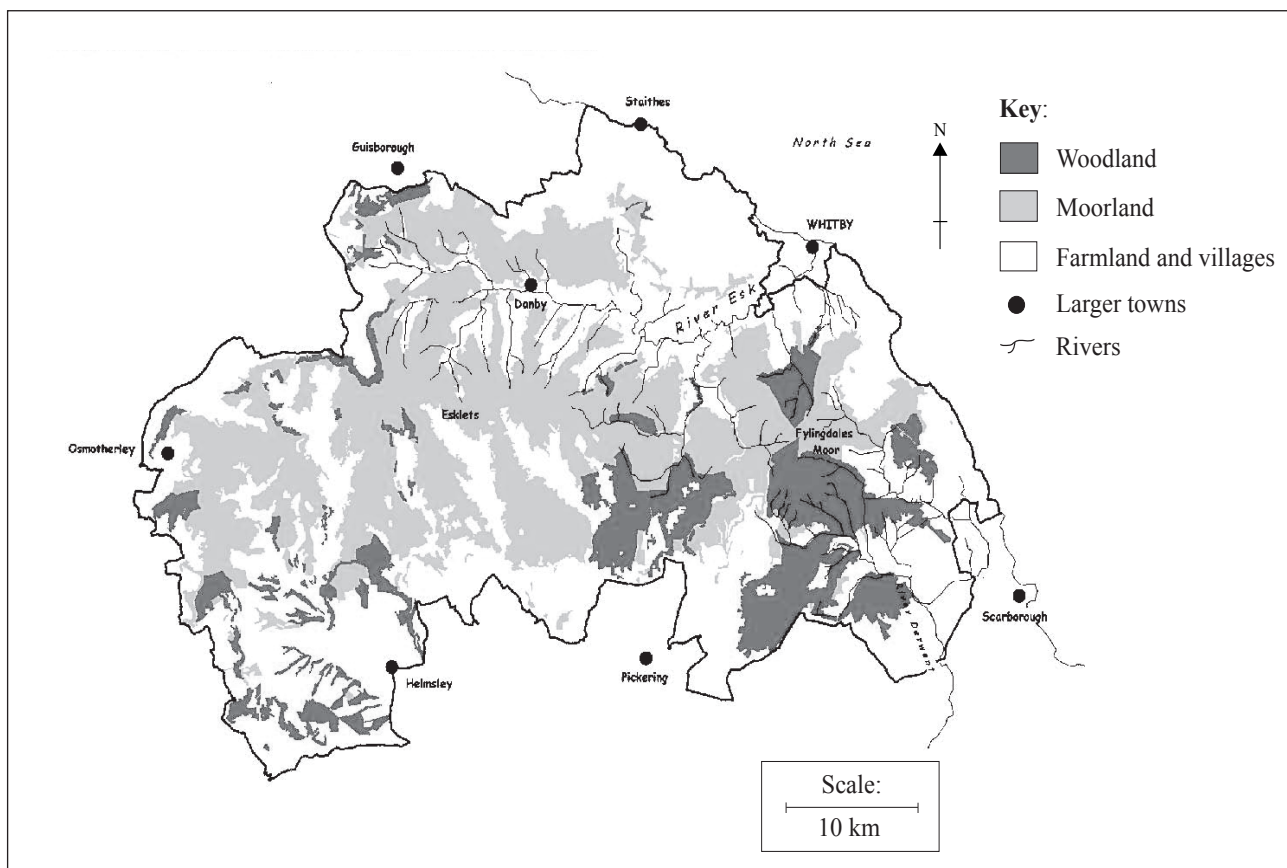


Badger
(*Meles meles*)



Merlin
(*Falco columbarius*)

[We are grateful for the help of the North York Moors National Park Authority, www.northyorkmoors.org.uk and reproduced courtesy of www.mikekipling.com/NYMNPA]

Figure 3 Land use of the NYMNP

[We are grateful for the help of the North York Moors National Park Authority, www.northyorkmoors.org.uk]

| Land use type | % of the NYMNP area |
|------------------------------|---------------------|
| Moorland | 34 |
| Farmland – arable (crops) | 22 |
| Farmland – grass | 20 |
| Woodland – conifers | 15 |
| Woodland – broadleaved/mixed | 7 |
| Other | 2 |

[We are grateful for the help of the North York Moors National Park Authority, www.northyorkmoors.org.uk]

Land ownership

80% of the NYMNP is owned by private individuals including farmers.

20% is owned by commercial and government organizations.

Figure 4 The climate of the NYMNP

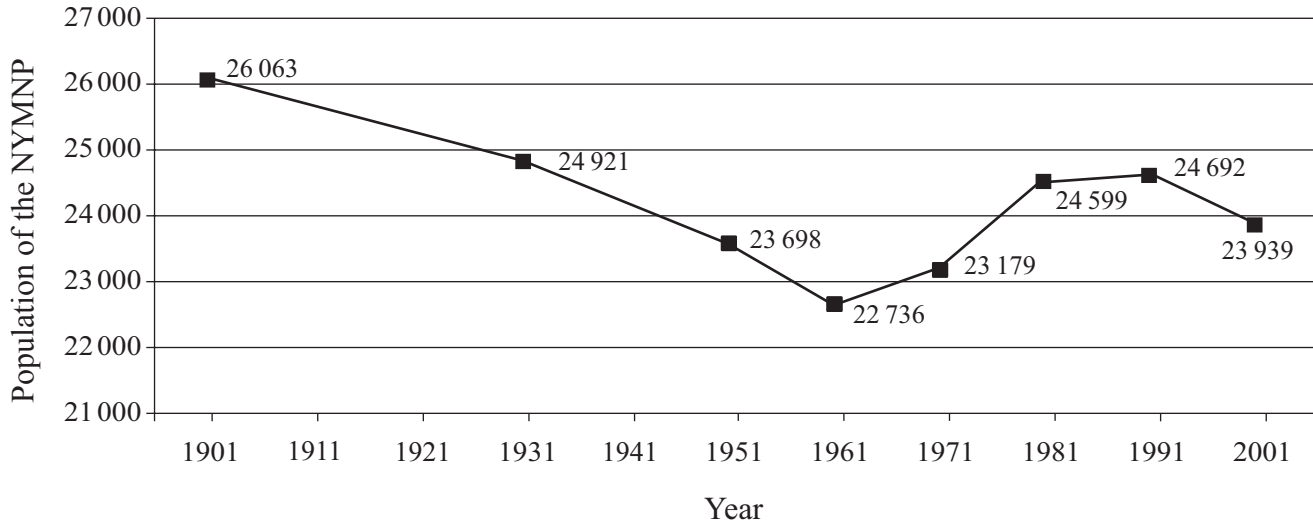
| | Higher land (over 250 m above sea level) | Lower land (sea level to 250 m altitude) |
|-------------------------------------|---|---|
| Annual precipitation / mm | 1015 | 762 |
| Mean summer temperature / °C | 12.7 | 15.0 |
| Mean winter temperature / °C | 1.7 | 2.7 |
| Number of days of snow cover / year | >40 | 15–20 |

[We are grateful for the help of the North York Moors National Park Authority, www.northyorkmoors.org.uk]

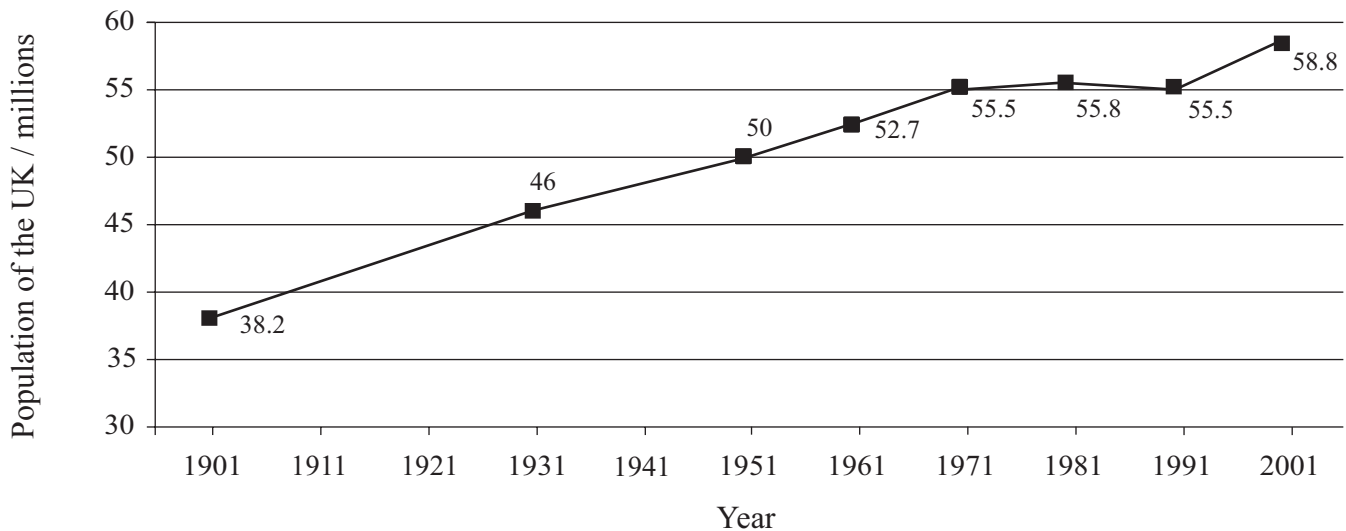
Figure 5 Species numbers in the UK and in the NYMNP

| Type of species | Total number of species found in the UK | % of total UK species found in NYMNP |
|------------------------|--|---|
| Mammals | 48 | 68 |
| Breeding birds | 210 | 59 |
| Plants | 1480 | 57 |

[We are grateful for the help of the North York Moors National Park Authority, www.northyorkmoors.org.uk]

Figure 6 Demographics of the NYMNP and the UK**Figure 6(a)****Population changes in the 20th century of the NYMNP**

[We are grateful for the help of the North York Moors National Park Authority, www.northyorkmoors.org.uk]

Figure 6(b)**Population changes in the 20th century in the UK**

[We are grateful for the help of the North York Moors National Park Authority, www.northyorkmoors.org.uk]

There are no major centres of industry or large cities in the NYMNP.

The number of people working in the agriculture industry and on the land has fallen over the last 100 years.

Figure 6(c)

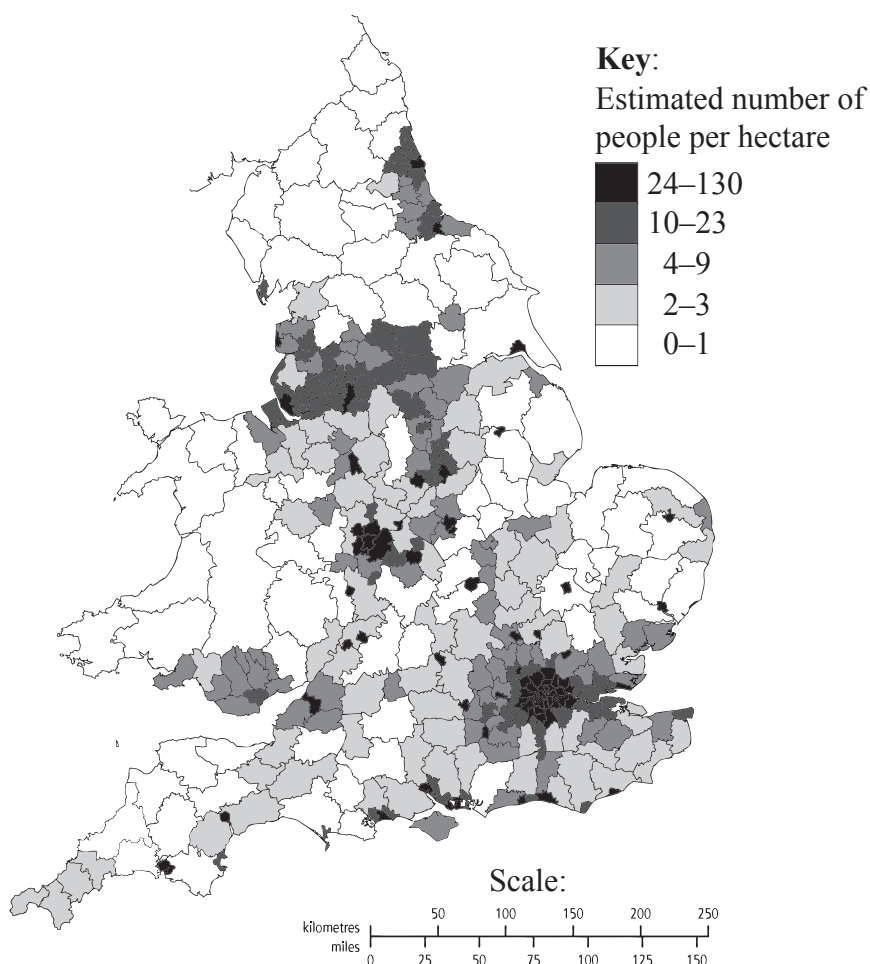
2001 population census statistics

| | NYMNP | UK |
|---|--------------|-----------|
| % of population aged under 16 years | 16.7 | 20 |
| % of population aged over 16 and under 60 | 63 | 64 |
| % of population aged over 60 | 20.1 | 15.8 |
| Settlements with a population of over 3000 people | 0 | 1809 |

[We are grateful for the help of the North York Moors National Park Authority, www.northyorkmoors.org.uk]

Figure 6(d)

Population density in England and Wales



[Source: Reproduced under the terms of the Click-Use Licence.]

The UK, which includes England and Wales, had a population of 58.8 million in 2001 and an overall population density of 2.43 people per hectare which is one of the highest in the world, due to the very high population density (over one third of the total population) in south-east England, with over 8 million in Greater London.

Figure 7 Fact file on bracken and its control

- bracken is a fern that rapidly colonizes temperate acid soils, like those in the NYMNP
- bracken outcompetes all other plants, producing a monoculture
- its leaves and spores are poisonous to many animals and to people
- it is hard to kill because it has many underground stems which quickly grow leaves again, even when growth above ground is destroyed
- methods of control of bracken include ploughing the land, cutting or crushing the young plants, grazing by cattle and spraying herbicides to kill the plants.

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Figure 8 Questions and answers on UK national parks

What is a national park in the UK?

An area of countryside that is beautiful, spectacular and often hilly or mountainous with a low human population density.

Where are they?



[Source: Crown copyright. Reproduced by permission of Ordnance Survey and the UK Association of National Park Authorities.]

When were they designated?

Between 1951 and 2009.

Who owns the land?

National parks are not publicly-owned land in the UK but are specially protected in law. Unlike national parks in most of the rest of the world, UK national parks are not wilderness areas.

Do people live there?

Yes. Unlike some other countries, UK national parks do not exclude people living and working within them but there are strict regulations about new buildings and development within the park boundaries. Farming continues within the parks and there are small towns and villages.

Who controls the national parks?

Each national park has an organization called a National Park Authority to help look after it. By law, each National Park Authority has to: conserve and enhance the natural beauty, wildlife and cultural heritage; promote opportunities for the understanding and enjoyment of the special qualities of national parks by the public; support the economic and social well-being of local communities.

Who pays for the national parks?

The UK tax payers and various grants from bodies such as the European Union.

Figure 9 Fact file on national parks of the world

- more than 6500 designated national parks and protected areas worldwide
- cover 12% of the Earth's surface (according to the International Union for the Conservation of Nature – IUCN)
- more than 100 national parks in Europe
- usually in undeveloped areas with examples of biodiversity or unusual geological features
- in 1864, the first national park – Yosemite Valley, California (USA) – was set aside by Abraham Lincoln
- the 2003 United Nations List of Protected Areas was a comprehensive list of all the world's known protected areas and listed 102 000 sites covering 18.8 million sq km.